

Claims

- [c1] A cutting tool to cut an object in a well comprising:
 - a mandrel having a base mounted thereon, the mandrel having an upper end and a lower end;
 - a sleeve carried on the mandrel, the sleeve having a contoured profile that mates with a contoured profile on the base and in which the object passes through the base and the sleeve;
 - a housing mounted to the upper end of the mandrel and releasably engaged with the sleeve to impart a force on the sleeve when the housing is pulled upward such that the sleeve rotates as it tracks the contoured profile on the base and thereby cuts the object.
- [c2] The cutting tool of claim 1 in which the contoured profiles are helixes.
- [c3] The cutting tool of claim 1 further comprising one or more lugs that releasably engage the sleeve to the housing.
- [c4] The cutting tool of claim 3 further comprising one or more slots in the sleeve to carry the one or more lugs.

- [c5] The cutting tool of claim 3 further comprising a groove in the housing into which the one or more lugs extend.
- [c6] The cutting tool of claim 3 further comprising a recess in the mandrel into which the one or more lugs retract to release the sleeve from the housing.
- [c7] The cutting tool of claim 1 in which the mandrel has a severable zone above the base.
- [c8] The cutting tool of claim 1 further comprising an upper tubing connected to an upper end of the housing and a lower tubing connected to the lower end of the mandrel.
- [c9] The cutting tool of claim 1 in which the object is a control line.
- [c10] The cutting tool of claim 1 in which the object is a hydraulic conduit, an electric cable, a fiber optic cable, or a plurality of those in any combination.
- [c11] The cutting tool of claim 1 in which there are a plurality of objects.
- [c12] A completion apparatus for use in a subterranean well comprising:
 - an upper tubing;
 - a housing mounted to the upper tubing;
 - a mandrel mounted to and enclosed by the housing, the

mandrel having a severable zone;
a base moveably mounted on the mandrel and releasably mounted to the housing, the base having a contoured edge;
a sleeve rotatably mounted on the mandrel above the base, the sleeve having a mating contoured edge such that translation of the base induces rotation of the sleeve relative to the mandrel;
a line passing along the upper tubing, the housing, and through passageways in the base and the sleeve; and
a lower tubing mounted to the mandrel.

[c13] The completion apparatus of claim 12 in which the line is a hydraulic conduit, an electric cable, or a fiber optic cable.

[c14] The completion apparatus of claim 12 in which the housing has a channel along its length through which the line is placed.

[c15] The completion apparatus of claim 12 in which the base and sleeve have channels in which the line initially resides.

[c16] The completion apparatus of claim 12 in which square threads are used to mount the housing to the mandrel.

[c17] The completion apparatus of claim 12 in which a thrust

bearing supports the sleeve.

- [c18] The completion apparatus of claim 12 in which a clutch resides between the base and the mandrel.
- [c19] The completion apparatus of claim 12 in which the sleeve and base are manufactured from a single tube.
- [c20] A method to cut an object in a well comprising:
 - placing a tubing cutter in the vicinity of a severable zone in a mandrel;
 - severing the mandrel with the tubing cutter;
 - pulling upward on a housing, the housing being connected both to the mandrel above where the mandrel was severed and to a sleeve moveably carried on the mandrel below where the mandrel was severed;
 - cutting the object by rotating the sleeve, the sleeve being rotated in response to the upward pull of the housing.